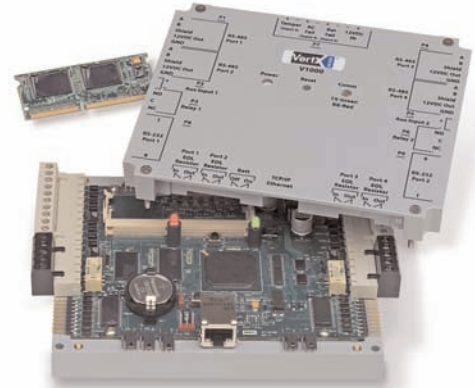# VertX™ V1000 Network Controller

Overview

The VertX products provide a complete and fully featured hardware/firmware infrastructure for access control software host systems. The V1000 can communicate via industry standard TCP/IP protocol, over 10/100 Mbps Ethernet or the Internet and has a 32-bit RISC processor. On-board flash memory allows program updates to be downloaded via the network. The V1000 connects up to 32 Door/Reader, Input Monitor, or Output Control sub-controllers via two independent RS-485 networks, each network having two sets of input connections for optimum system topology. This architecture minimizes the impact on corporate LANs by using only one TCP/IP address for every 32 sub-controllers and by handling low-level transactions on the RS-485 network.

Features

- Stores a complete access control and configuration database for up to 32 Reader sub-controllers (up to 64 doors) and 20,000 cardholders with expansion capability up to 250,000 cardholders.

- The access control system sub-controllers with combinations of devices with a maximum of:
  - 32 Door/Reader Sub-Controllers (up to 64 doors/readers) or
  - 32 Input Monitor Sub-Controllers (up to 512 monitor points) or
  - 32 Output Control Sub-Controllers (up to 384 control relays)

- Reports supervised inputs/alarms with 255 priorities.

- Allows local connection of a laptop computer for diagnostics and configuration.

- Connects to the host and other devices on a TCP/IP network.

- Receives and processes real time commands from the host software application.

- Reports all activity to the host.

- Controls and communicates with all connected devices.

- Buffers offline transactions and uploads to the host when communication is restored.

- Allows fallback communications via dial-up or RF modem if TCP/IP network communication is lost.

- UL 294 and UL 1076 recognized component.

Configuration
Attractive polycarbonate enclosure protects components from damage and provides identification of all indicators on the cover.

VertX™ V1000 Network Controller

Features

Mounting

Mount to any wall surface, using four screws. For UL compliance, one or more controllers can be mounted inside a locking NEMA-4 rated enclosure with:
• DC supply with battery back-up
• Enclosure tamper switch
• All connections made through conduit

Visual Indicators

Power LED indicates that sufficient DC voltage is being provided to the unit. RS-485 Communications LED: solid green indicates successful communications to downstream devices, red flash indicates a failed communications attempt, solid red indicates no communications.

Easily Interfaced

• RJ-45 connector for Ethernet TCP/IP
• Quick-disconnect screw terminal connectors:
  • Four RS-485 connections to interfaces
  • 2 supervised analog inputs for general purpose applications
  • 2 non-latching output relays for local alarm annunciation (rated 2A @ 30 VDC)
  • DC Power input
  • Tamper input*
  • AC Power Fail input*
  • Battery Fail input*
*Can be configured as a general purpose input

Hardware

• 32-bit RISC CPU, 100 MHz

Memory

• 8 MB onboard Flash memory
• 16 MB / 32 MB memory expansions available
• 32 MB SDRAM
• 256k SRAM

Specifications

Dimensions

5.8" W x 4.825" H x 1.275" D
(147.32 mm x 122.55 mm x 32.38 mm)

Weight: 12.4 oz (.35 kg)

Enclosure Material: UL94 Polycarbonate

Power Supply Requirements

140 mA @ 12-18 VDC
Recommended: Supervised linear power supply with battery backup, input surge protection, and AC Fail and Battery Low contact outputs.

Separate supervised DC supply with battery back-up recommended for relay activated devices.

Operating Environment

Indoors, or customer-supplied NEMA-4 Enclosure

Temperature

32° to 122° F (0° to 50° C)

Humidity

5% to 95% relative, non-condensing

Communication Ports

RS-485 – two wire.
TCP-IP – one port, 10 or 100 Mbps

Certifications

UL 294 and UL 1076 Recognized Component for the US
CSA 205 for Canada
FCC Class A Verification
EMC for Canada, EU (CE Mark), Australia (C-Tick Mark), New Zealand, Japan
EN 50130-4 Access Control Systems Immunity for the EU (CE Mark)

Cable Distance

RS-485 – 4000 feet per network (two independent RS-485 networks) using Belden 3105 (22AWG) 2-twisted pair, shielded 100Ω cable

TCP/IP – 300 feet (100 m) to next device, using Category 5 cable, Alpha 9504C or 9504F

Input Circuits – 500 feet (150 m), 2-conductor, shielded, using ALPHA 1292C (22AWG) or Alpha 2421C (18AWG)

Output Circuits – 500 feet (150 m), 2-conductor, using ALPHA 1172C (22AWG) or Alpha 1897C (18AWG) Minimum wire gauge depends on cable length and current requirements.